

CLAIMS

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1. A pneumatic tire comprising

a pair of bead portions each provided therein with a bead core made of windings of at least one wire,

a carcass ply of cords extending between the bead portions and turned up around the bead core from the axially inside to the outside of the tire to form a pair of turnup portions and a main portion therebetween,

a rubber bead apex disposed radially outside the bead core and between each said turnup portion and the main portion,

a fiber reinforced rubber spacer interposed between the bead core and the carcass ply to provide a positive distance between the carcass ply cords and bead core wire,

said fiber reinforced rubber spacer having a securing portion which extends radially outwardly and axially outwardly from the axially inside of the bead core while separating from the bead core but contacting with the rubber bead apex, and

a distance (L1, L2) between an outermost point of said securing portion and the bead core being in a range of from 0.05 to 1.0 times a height of the bead core.

2. The pneumatic tire according to claim 1, wherein
- said fiber reinforced rubber spacer is made of a single rubber strip reinforced with organic fibers,
- said single rubber strip is loosely wound at least once around the bead core to form a slack portion radially outside the bead core, and
- said securing portion is formed by the slack portion.
3. The pneumatic tire according to claim 2, wherein

a rubber layer harder than the rubber bead apex is inserted between the slack portion and the bead core.

4. The pneumatic tire according to claim 2, wherein a rubber layer softer than the rubber bead apex is inserted between the slack portion and the bead core.

5. The pneumatic tire according to claim 2, wherein a rubber layer having the same hardness as the rubber bead apex is inserted between the slack portion and the bead core.

6. The pneumatic tire according to claim 2, wherein said single rubber strip is wound, starting from a position under the bead core, towards the axially inside of the tire, and after wound one or more times it is continuously wound towards the radially outside, but from a certain point, it separates from the previous winding and extends radially outwardly along the carcass ply main portion while contacting with an axially inside of the rubber bead apex, so that a distance between a radially outer end of this radially outwardly extending portion and the bead core is in a range of from 0.05 to 1.0 times the height of the bead core.

7. The pneumatic tire according to claim 1, wherein said fiber reinforced rubber spacer is made of a single rubber strip reinforced with organic fibers,

said single rubber strip is wound, starting from a position under the bead core, towards the axially inside of the tire, and after wound one or more times it is continuously wound towards the radially outside, but from a certain point, it separates from the previous winding and extends radially outwardly

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along the carcass ply main portion while contacting with an axially inside of the rubber bead apex, and

said securing portion is formed by this radially outwardly extending portion.

8. The pneumatic tire according to claim 1, wherein said fiber reinforced rubber spacer is made of a first rubber strip and a second rubber strip each reinforced with organic fibers,

the first rubber strips is wound at least once around the bead core,

the second rubber strip is disposed between the first rubber strip and the carcass ply and turned around the bead core so as to form a portion extending radially outwardly along the carcass ply main portion while contacting with an axially inside of the rubber bead apex, and

said securing portion is formed by this radially outwardly extending portion.

9. The pneumatic tire according to claim 1, wherein said fiber reinforced rubber spacer is made of two rubber strips each reinforced with organic fibers,

said fiber reinforced rubber spacer is turned around the bead core so as to form a portion extending radially outwardly along the carcass ply main portion while contacting with an axially inside of the rubber bead apex, and

said securing portion is formed by this radially outwardly extending portion.